

# CH2MHILL TRANSMITTAL

**To:** RCRA Corrective Action and Permits  
Air and Waste Management Division  
U.S. EPA Region 7  
11201 Renner Boulevard  
Lenexa KS 66219  
(913-551-7122)

**From:** Cindi Weeden

**Attn:** Ms. Ruby Crysler

**Date:** May 30, 2017

**Re:** Corrective Measures Performance Evaluation Report (CMPER) and Cost Estimate for  
2040 West River Drive Davenport

**We Are Sending You:**

Method of shipment: Fed Ex Standard Overnight

X Enclosed

Under separate cover via

Shop Drawings

X

Documents

Tracings

Prints

Specifications

Catalogs

Copy of letter

Other: (reports)

| Quantity | Description  |
|----------|--|
| 2        | Hard copies of the 5-Year Review CMPER and associated cover letter                             |
| 2        | Hard copies of the updated financial cost estimate for the project and associated cover letter |

On behalf of Paul Rohde the listed material is enclosed for your use

If the material received is not as listed, please notify us at once.

***Cindi Weeden***

CH2M HILL  
135 S. 84th Street  
Suite 400  
Milwaukee WI 53214-1456  
Te. 414-847-0251  
email [cindi.weeden@ch2m.com](mailto:cindi.weeden@ch2m.com)

RCRA 05/30/2017



573332

c: Michael Potts/Ramboll Environ  
Anna Kunkel/Philips North America  
John P. Cleary/Harcros Chemicals  
Paul Rohde/CH2M HILL

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MAY 31 2017

AWMD/RCAP



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Ms. Ruby Crysler  
RCRA Corrective Action and Permits Branch  
Air and Waste Management Division  
United States Environmental Protection Agency  
Region VII  
11201 Renner Boulevard  
Lenexa, KS 66219

May 26, 2017

Subject: Updated Cost Estimate and Financial Assurance  
2040 West River Drive; Davenport, Iowa  
EPA Docket No. RCRA-07-2012-0013

Dear Ms. Crysler:

On behalf of T H Agriculture & Nutrition, L.L.C. (THAN), Elementis Chemicals, Inc., and Harcross Chemicals Inc (Respondents) of the above referenced property, CH2M HILL is providing an updated cost estimate for the ongoing remediation project as required per Section XXIV in the Administrative Order on Consent (AOC).

Please contact me at 414-272-2426 x 40376 or Ms. Anna Kunkel at (913) 538-2349 if you have any questions.

Sincerely,

CH2M HILL

A handwritten signature in black ink that reads 'Paul Rohde'.

Paul D. Rohde, P.G.  
Project Manager

Enclosures

c: Anna Kunkel/Philips North America  
John P. Cleary /Harcros Chemicals Inc.  
Michael Potts/Ramboll Environ

Enclosure 2  
Corrective Measures Implementation Cost Estimate  
2040 West River Drive, Davenport, IA

| Component Description   | Corrective Measure Implementation Cost Years |                 |                 |                 |                 |                 |                 |                 |                 |                 | 2013-2021   |
|---|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------|
|   | Year 2012 Costs                              | Year 2013 Costs | Year 2014 Costs | Year 2015 Costs | Year 2016 Costs | Year 2017 Costs | Year 2018 Costs | Year 2019 Costs | Year 2020 Costs | Year 2021 Costs |             |
| CMI Scope of Work Task 1  |  |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| > CMI Scope of Work Item #1 (OMMP)  |  |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| Preparation of the OMMP   | \$12,000                                     |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| >Item #2 Long-term Groundwater Monitoring Plan (LTMP)                             |  |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| Preparation of the LTMP   | \$7,500                                      |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| Annual Long-term Groundwater Sampling   | \$65,000                                     | \$65,000        | \$65,000        | \$65,000        | \$65,000        | \$55,000        | \$55,000        | \$55,000        | \$55,000        | \$55,000        |             |
| Semi-Annual Groundwater Sampling Contingency                                      |  | \$5,000         | \$5,000         | \$5,000         | \$5,000         |                 | \$5,000         | \$5,000         | \$5,000         | \$5,000         |             |
| Monitoring Well Repair Allowance  | \$5,000                                      | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         |             |
| Annual Waste Disposal   | \$7,500                                      | \$7,500         | \$7,500         | \$7,500         | \$7,500         | \$4,000         | \$4,000         | \$4,000         | \$4,000         | \$4,000         |             |
| Well Abandonment  | \$15,000                                     |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| Annual Site Management  | \$25,000                                     | \$25,000        | \$25,000        | \$25,000        | \$25,000        | \$25,000        | \$25,000        | \$25,000        | \$25,000        | \$25,000        |             |
| >Item #3 Enhanced In Situ Bioremediation (EISB) Contingency Plan                  |  |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| Data Evaluation to Support EISB Contingency Work Plan                             |  |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| Preparation of EISB Contingency Work Plan   | \$10,000                                     |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| Respond to USEPA Comments   |  |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| >Item #4 In Situ Chemical Oxidation (ISCO) Injection                              |  |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| Preparation of an ISCO Injection Plan   | \$7,500                                      |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| ISCO Injection of 5 Shallow-bedrock Treatment Areas                               | \$115,000                                    | \$115,000       |                 | \$115,000       |                 | \$115,000       |                 | \$115,000       |                 | \$115,000       |             |
| Installation of 2 Additional Shallow-bedrock Injection Wells                      |  | \$20,000        |                 | \$20,000        |                 | \$20,000        | \$20,000        |                 |                 |                 |             |
| Injection Well Repair Allowance   | \$5,000                                      | \$5,000         |                 | \$5,000         |                 | \$5,000         |                 | \$5,000         |                 | \$5,000         |             |
| Permanganate Tote Cleaning and Disposal   | \$3,500                                      | \$3,500         |                 | \$3,500         |                 | \$3,500         |                 | \$3,500         |                 | \$3,500         |             |
| Well Drilling Waste Disposal  |  | \$4,500         |                 | \$4,500         |                 | \$4,000         | \$4,000         |                 |                 |                 |             |
| Persulfate Injection - 2 Target Treatment Areas                                   |  |                 |                 |                 |                 |                 | \$120,000       |                 |                 |                 |             |
| Persulfate Injection Pilot Study Design, Work Plan, QAPP Addendum                 |  |                 |                 |                 |                 | \$20,000        |                 |                 |                 |                 |             |
| >Item #5 Health and Safety Plan (HASP)  |  |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| Preparation of a Site-specific HASP   | \$2,500                                      | \$1,000         | \$1,000         | \$1,000         | \$1,000         | \$1,000         |                 |                 |                 |                 |             |
| >Item #6 Quality Assurance Project Plan (QAPP) & Sampling and Analysis Plan (SAP) |  |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| Preparation of the QAPP and SAP   | \$8,500                                      |                 |                 |                 | \$2,500         |                 |                 |                 |                 |                 |             |
| >Item #7 Institutional Controls   |  |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| Preparation of an Institutional Controls Plan                                     | \$5,000                                      |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| Annual Visual Site Inspection   | \$1,000                                      | \$1,000         | \$1,000         | \$1,000         | \$1,000         | \$1,000         | \$1,000         | \$1,000         | \$1,000         | \$1,000         |             |
| CMI Scope of Work Task 2  |  |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| Annual Remedy Performance Report (ARPR)   | \$80,000                                     | \$50,000        | \$50,000        | \$50,000        | \$50,000        | \$50,000        | \$50,000        | \$50,000        | \$50,000        | \$50,000        |             |
| IC Implementation   | \$10,000                                     |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| CMI Scope of Work Task 3  |  |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| 5-Year Corrective Measures Performance Evaluation Report                          |  |                 |                 |                 |                 | \$30,000        |                 |                 |                 |                 |             |
| Respond to USEPA Comments   |  |                 |                 |                 |                 | \$5,000         |                 |                 |                 |                 |             |
| CMI Scope of Work Task 4  |  |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| Corrective Measures Completion Report   |  |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| Well Abandonment  |  |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| Respondents Voluntary Actions Not Required Under OMMP                             |  |                 |                 |                 |                 |                 |                 |                 |                 |                 |             |
| 2017 Northern MIP Investigation   |  |                 |                 |                 |                 | \$60,000        |                 |                 |                 |                 |             |
|   | \$385,000                                    | \$307,500       | \$159,500       | \$307,500       | \$162,000       | \$403,500       | \$289,000       | \$268,500       | \$145,000       | \$268,500       | \$1,374,500 |
| Total Corrective Measure Implementation Cost Years 2017-2031                      |  |                 |                 |                 |                 |                 |                 |                 |                 |                 | \$3,167,500 |

Enclosure 2  
Corrective Measures Implementation Cost Estimate  
2040 West River Drive, Davenport, IA

| Component Description   | Year 2022 Costs | Year 2023 Costs | Year 2024 Costs | Year 2025 Costs | Year 2026 Costs | Year 2027 Costs | Year 2028 Costs | Year 2029 Costs | Year 2030 Costs | Year 2031 Costs | Corrective Measure                     |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|
|   |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 | Implementation Cost Years<br>2022-2031 |
| CMI Scope of Work Task 1  |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| > CMI Scope of Work Item #1 (OMMP)  |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| Preparation of the OMMP   |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| >Item #2 Long-term Groundwater Monitoring Plan (LTMP)                             |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| Preparation of the LTMP   |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| Annual Long-term Groundwater Sampling   | \$55,000        | \$55,000        | \$55,000        | \$55,000        | \$55,000        | \$55,000        | \$55,000        | \$55,000        | \$55,000        |                 |  |
| Semi-Annual Groundwater Sampling Contingency                                      | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         |                 |  |
| 1 Year of Quarterly Groundwater Sampling to Document RAO Attainment               |                 |                 |                 |                 |                 |                 |                 | \$100,000       | \$100,000       |                 |  |
| Monitoring Well Repair Allowance  | \$3,000         | \$3,000         | \$3,000         | \$3,000         | \$3,000         | \$3,000         | \$3,000         | \$3,000         | \$3,000         |                 |  |
| Waste Disposal  | \$4,000         | \$4,000         | \$4,000         | \$4,000         | \$4,000         | \$4,000         | \$4,000         | \$7,500         | \$7,500         | \$4,000         |  |
| Well Abandonment  |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| Annual Site Management  | \$25,000        | \$25,000        | \$25,000        | \$25,000        | \$25,000        | \$25,000        | \$25,000        | \$25,000        | \$25,000        | \$25,000        |  |
| >Item #3 Enhanced In Situ Bioremediation (EISB) Contingency Plan                  |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| Data Evaluation to Support EISB Contingency Work Plan                             | \$35,000        |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| Preparation of EISB Contingency Work Plan   |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| Respond to USEPA Comments   |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| >Item #4 In Situ Chemical Oxidation (ISCO) Injection                              |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| Preparation of an ISCO Injection Plan   |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| ISCO Injection of 5 Shallow-bedrock Treatment Areas                               |                 | \$115,000       |                 | \$115,000       |                 |                 |                 |                 |                 |                 |  |
| Installation of 2 Additional Shallow-bedrock Injection Wells                      |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| Injection Well Repair Allowance   |                 | \$5,000         |                 | \$5,000         |                 |                 |                 |                 |                 |                 |  |
| Permanganate Tote Cleaning and Disposal   |                 | \$3,500         |                 | \$3,500         |                 |                 |                 |                 |                 |                 |  |
| Well Drilling Waste Disposal  |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| Rebuild Secondary Containment and Injection Tanks                                 |                 | \$25,000        |                 |                 |                 |                 |                 |                 |                 |                 |  |
| >Item #5 Health and Safety Plan (HASP)  |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| Preparation of a Site-specific HASP   |                 | \$1,000         |                 | \$1,000         |                 | \$1,000         |                 | \$1,000         |                 | \$1,000         |  |
| >Item #6 Quality Assurance Project Plan (QAPP) & Sampling and Analysis Plan (SAP) |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| Preparation of the QAPP and SAP   | \$1,000         |                 |                 |                 |                 | \$1,000         |                 |                 |                 |                 |  |
| >Item #7 Institutional Controls   |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| Preparation of an Institutional Controls Plan                                     |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| Annual Visual Site Inspection   | \$1,000         | \$1,000         | \$1,000         | \$1,000         | \$1,000         | \$1,000         | \$1,000         | \$1,000         | \$1,000         | \$1,000         |  |
| CMI Scope of Work Task 2  |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| Annual Remedy Performance Report (ARPR)   | \$25,000        | \$25,000        | \$15,000        | \$25,000        | \$25,000        | \$25,000        | \$25,000        | \$25,000        | \$25,000        | \$25,000        |  |
| IC Implementation   |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| CMI Scope of Work Task 3  |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| 5-Year Corrective Measures Performance Evaluation Report                          | \$30,000        |                 |                 |                 |                 | \$30,000        |                 |                 |                 |                 |  |
| CMI Scope of Work Task 4  |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |  |
| Corrective Measures Completion Report   |                 |                 |                 |                 |                 |                 |                 |                 | \$55,000        |                 |  |
| Well Abandonment  |                 |                 |                 |                 |                 |                 |                 |                 |                 | \$50,000        |  |
|   | \$184,000       | \$267,500       | \$108,000       | \$242,500       | \$118,000       | \$150,000       | \$118,000       | \$222,500       | \$276,500       | \$106,000       | \$1,793,000                            |
| Total Corrective Measure Implementation Cost Years 2017-2031                      |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 | \$3,167,500                            |